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THE VALUE OF ANCIENT MEXICAN MANUSCRIPTS
IN THE STUDY OF THE GENERAL
DEVELOPMENT OF WRITING

BY

ALFRED M. TOZZER

Harvard University, Cambridge, Mass.

FROM THE SMITHSONIAN REPORT FOR 1911, PAGES 493-506
(WITH PLATES 1-5)



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THE VALUE OF ANCIENT MEXICAN MANUSCRIPTS IN THE STUDY OF THE GENERAL DEVELOPMENT OF WRITING.¹

[With 5 plates.]

By ALFRED M. TOZZER.
Harvard University, Cambridge, Mass.

The successive stages through which writing has passed have been fairly generally accepted and I do not intend at this time to add anything new in regard to this development of writing.² Illustrative examples have usually been drawn from various sources in point of time and place. It is possible, however, to find in the Mexican manuscripts illustrations of all the steps in the early history of writing.³

Mexico is the only part of the new world where there are any appreciable data on the prehistoric life of a people outside of the monuments and objects found in connection with them. In Mexico and Central America we approach even if we do not, by any means, reach that fortunate situation in the old world where the documentary evidence of an ancient culture, a literature, is present as an important aid in the study of the life of a people.

The manuscripts of Mexico and Central America have, for the most part, been neglected by all except the specialists in this field. These documents furnish important examples of primitive ideas of art and illustration together with minute details of ethnological interest.

The Mexican manuscripts may be divided into two obvious classes, those written before the advent of the Spaniards at the beginning of the sixteenth century and those written during the early days of the Spanish occupation. Another classification might be based on the distinct localities where the manuscripts are supposed to have been written and the nationality of their authors. The codices of the

¹ Reprinted by permission from the proceedings of the American Antiquarian Society for April, 1911, Worcester, Mass., published by the society.

² For a short account of the development of writing see Clodd, 1907.

³ A portion of this paper was presented at the Toronto meeting of the Archaeological Institute of America, Dec. 28-31, 1908. A brief abstract is published in the American Journal of Archaeology (second series), vol. 13, pp. 65-66, 1909.

Nahuas or Aztecs of the plateau of Mexico are to be distinguished from those of the Nahuas of the tierra caliente region and these in turn from those of the Zapotecs in the State of Oaxaca, and these, again, from the manuscripts of the Mayas of Yucatan, southern Mexico, and Guatemala. The many minor differences do not prevent one from seeing a great similarity both in subject-matter and treatment running through them all. The calendar, together with other features of the life of the different peoples of Mexico and Central America, shows a common origin and, to a certain point at least, a parallel development.

The number of manuscripts is limited. The Maya documents form the smallest class with three. There are more than a score of available codices from the Mixtec-Zapotec region, a great part of which show a strong Nahua influence, and about half as many from the Nahuas proper, in addition to a large number of single maps and other manuscript material from Mexico.¹

The Spanish priests in their attempts to Christianize the natives aimed especially to destroy all that pertained to the ancient teaching. Accounts tell of the large number of manuscripts burned, and all owing to the misdirected zeal of these Spanish missionaries. The greater part of the documents still in existence are in European libraries, although a few still remain in public or private collections in Mexico.

The manuscripts are usually written either on long strips of deer-skin, fastened together end to end, or on strips of paper made of bark or of maguey fiber. The whole strip is, in most cases, folded up like a screen. The two sides of the sheet are often covered with a thin layer of fine plaster, on which the characters are painted. Those dating from post-Columbian times are often written on European paper.

The greater part of these early manuscripts have been published. Lord Kingsborough in the first quarter of the last century was the first to recognize the importance of reproducing the codices for study. The Duc de Loubat has been instrumental in bringing out in exact facsimile several of the most important ones. There is therefore a considerable amount of available material for a study of the writing of Mexico and Central America.

Both the pre-Columbian and the post-Columbian manuscripts contain records of an historical nature, accounts of migrations, the succession of rulers, campaigns, and lists of tribute. Different phases of the ancient religion and the calendar are also shown, the secular and the sacred calendar, astronomical calculations, the methods of divination of the lucky and unlucky days, and the religious ceremonies.

¹ For the names of the most important codices from Mexico and Central America, see Saville (1901), Lejeal (1902), and Lehmann (1905).

It is not, however, the ideas expressed in these documents but the methods used in expressing them, not what is written, but how it is written, not the content, but the means employed that the present paper aims to consider. The manuscripts form only a part of the available material for the study of the writing of the peoples of Mexico and Central America. The extensive use of stone carving on the façades of buildings, on altars and stelæ, and on the lintels opens up another extensive source from which examples might be drawn. It is only in one case, however, that an illustration will be taken from the stone bas-reliefs.

The early history of writing has been curiously alike over the greater part of the world. The preliminary step is in the use of reminders or mnemonics. These signs convey no message in themselves, but serve only as an aid in bringing to mind some event. They are not universally useful as are many specimens of picture writing. They can usually be employed only by those who possess the previous knowledge which the reminders serve to recall. Notched sticks and tallies of various kinds are well-known examples of this class. The Roman rosary immediately suggests itself as belonging to the same type. The Peruvian *quipu* or knotted string is usually cited as the best representative of the class of reminders. Boturini (1746) in his "Idea de una nueva historia general" states that the natives of Mexico used a knotted string for recording events before the invention of a hieroglyphic writing. Its native name was *nepohual tiztzin*, "*cordon de cuenta y numero*."¹ Lumholtz (1902, vol. 2, p. 128) states that the Huichols of north-central Mexico in setting out on a journey prepare two strings of bark fiber and tie as many knots in them as there are days in the journey. One string is left behind in the temple with one of the principal men and the other is carried on the trip. A knot is untied in each string each day. As the travelers always camp in the same places, they are protected from accidents in each place by the prayers of those at home. Lumholtz cites a second instance of the use of the knotted string as a reminder. In the *Hikuli* rite there is a general confession made by the women. "In order to help their memories each one prepares a string made out of strips of palm leaves in which she has tied as many knots as she has had lovers. This twine she brings to the temple and standing before the fire she mentions aloud all the men she has scored on her string, name after name. Having finished, she throws her list into the fire and when the god has

¹ Boturini, 1746, p. 85: "Nació assimismo en esta Edad un raro modo de historiar y fué con unos Cordones largos, en los quales se entretexian otros delgados, que pendian de el Cordon principal con nudos de diferentes colores. Llamabanse estas Historias Funiculares en los Reynos del Perú *Quipu*, y en los de la Nueva España *Nepohualtitzin*, derivando su denominacion de el adverbio *Nepohualli*, que quiere decir *Ochenta*, ò como si dixeramos, *Cordon de cuenta, y numero*, en que se referian y numeraban las cosas dignas de memoria, assi Divinas, como Humanas."

accepted and consumed it in his flame, all is forgotten." The men have a similar custom.

A single manuscript leaf of the Humboldt Collection, dated 1569 (pl. 1), shows the same idea of reminders together with true picture writing.¹ It is a baker's account. Just as the baker in many countries notched a stick in keeping his record, so here he employs much the same principle. The circles are tallies, the reminders of the number of tortillas or perhaps loaves of bread baked each day by the women. The sign of the flag over several of the circles is a symbol for 20. The circles containing the curved lines show the feast days, the Sundays, coming six days apart. The Spanish method of keeping time has been adopted in this case.

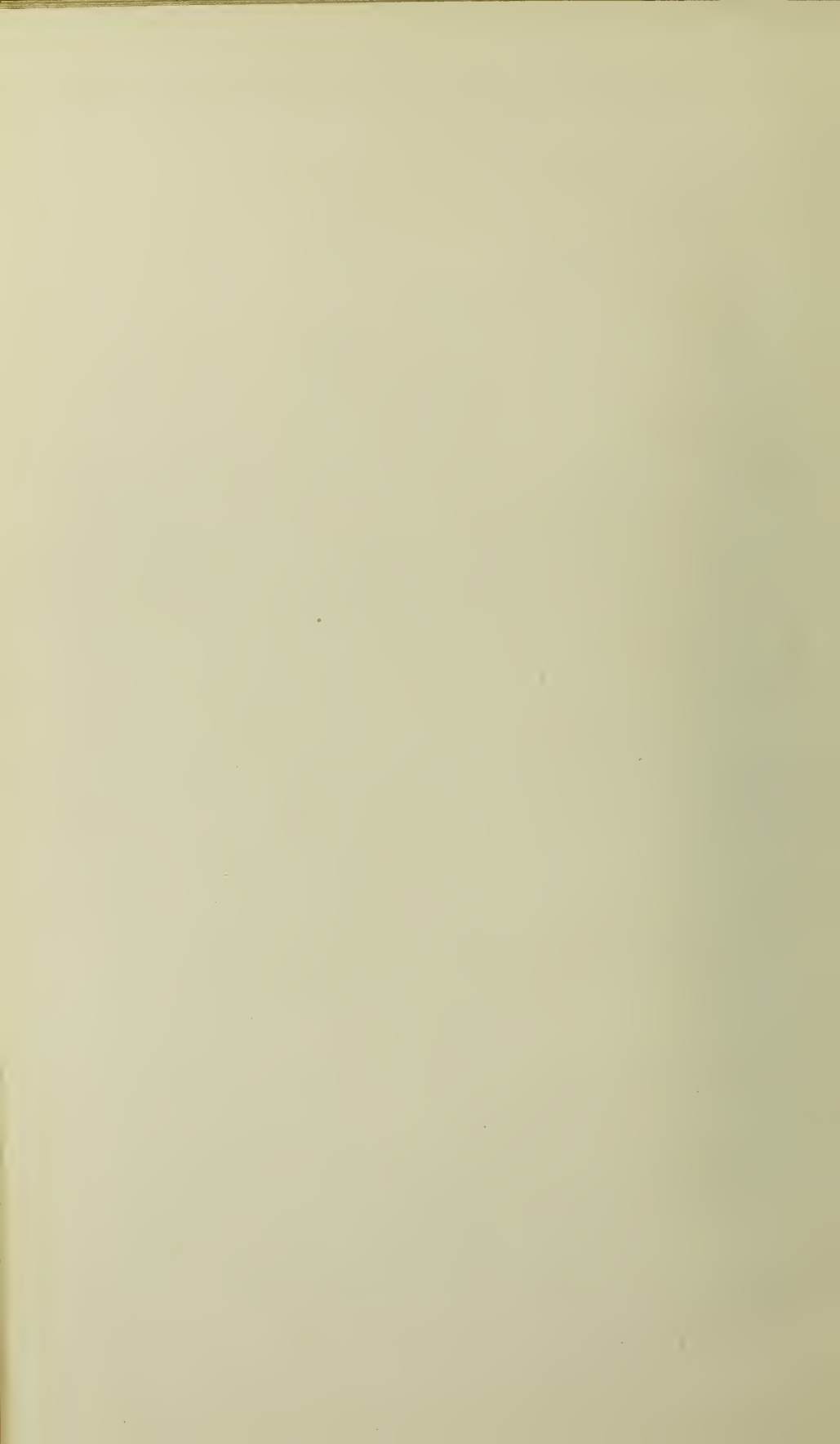
The first step in the development of writing after the preliminary stage of reminders is that of pure pictures. There is no lack of illustrations of this step in the manuscripts. Pictures are used simply as pictures with no idea of sound entering into the meaning. They are used not as symbols or signs of something else, but simply in their objective sense. There is no trace of mysticism. The objects represented can not be treated as ciphers or cryptograms in any attempt at their interpretation. A good example is found in a series of pages (pls. 2-5) from a post-Columbian manuscript in the Mendoza Collection, now in the Bodleian Library and published in Kingsborough (1831-1848, vol. 1, pls. 59-62).² The pictures give a clear account of the education of the Mexican boy and girl from the age of 3 to the age of 15. The boy and his father are shown on the left and the girl and her mother on the right. The years are indicated by circles, and the daily allotment of bread appears in front of each child. At the age of 3 a half cake or *tortilla* is the daily ration. whereas at 4 it is increased to a whole one.

Plate 2 shows the education from the ages of 3 to 6. Plate 3 indicates the tasks imposed and the punishments given to children from the ages of 7 to 10. Plate 4 continues the punishments for the eleventh and twelfth years and shows the tasks from the thirteenth and fourteenth years. Plate 5, at the top, indicates that at the age of 15 the boy is turned over to an outside authority to continue his education. The lower half of the same plate shows clearly by means of pictures the marriage ceremony. The groom carries his bride on his back into an inclosure and is accompanied by four women carrying torches. The marriage rite consists of tying the corners of the mantles of the two together. The marriage feast is also indicated. The Spanish accounts of the ancient marriage customs are no clearer

¹ This manuscript is called Fragment XIII of the Humboldt Collection and is described in Scler, 1893, and also in his collected works, vol. 1, pp. 276-283. This is translated in Bureau of Ethnology, Bulletin 28, pp. 212-217, pl. 18.

² This series of pages is also published in Mallory, 1888-89, pls. 35-38. I am indebted for this series of pictures (pls. 2-5) and also for pl. 1 to Mr. F. W. Hodge, chief of the Bureau of American Ethnology.





than the pictures shown in this manuscript. Every detail recorded in the picture is described in the Spanish texts covering these points.

It is not possible in the present paper to enter into a discussion of the different uses of picture writing among the Mexicans. From our point of view much that appears as mere decoration, as ornament, on the sculptured façades of the buildings and on the bas-reliefs are far more than decorative designs. There is in every case a meaning, however hidden it may be by the complication of the design.

Picture writing may develop along two lines, the first to a form of conventionalized pictures and the second to one characterized by symbolic forms, which in turn may become conventionalized. Conventionalization shows itself often in stereotyped forms used over and over again to express the same idea. The mountain almost always appears as shown in figures 3-5. All the top part is painted green, the bottom yellow with a line of red above. The color of the original drawings is a great aid in identifying the pictures.

The usual form of house is shown in figure 3, water as in figure 4 at the top of the mountain. The water is usually colored blue.

Symbolism may appear in the use of the part for the whole, the



FIG. 1.

picture of the whole body of a jaguar may give way to a representation of the head, or, still further, the idea of the animal may be expressed by the spotting of the skin. The road traveled is shown by footprints, as in figure 1. Night is pictured by the stars in a circular field, as seen in the Mendoza manuscript (pl. 4, *n*). Death is often shown by a skull.

Symbolism and conventionalism may appear in the same figure. Speech and song are usually expressed by a commalike form in front of the mouth, as shown before the parents instructing their children (pls. 2-5). These speech forms sometimes go so far as to indicate the actual character of the speech. An example taken from a stone bas-relief in Yucatan¹ illustrates this point (fig. 2). The whole design, of which that shown in figure 2 is only a small part, centers around an altar, behind which is shown the feathered serpent. Speech scrolls are indicated before the mouths of all the personages. The warrior above is bringing his offering of weapons. He has before his mouth, separated only by his breast ornament, the con-

¹ This bas-relief forms the back of the lower chamber of the Temple of the Tigers at Chichen Itza. For a drawing of the whole design, see Maudslay, 1895-1902, vol. 3, pl. 49. An explanation of the design is given in Seler, 1898.

ventionalized head of a serpent with open jaws, the nose plug, the eye, and teeth. This evidently is the representation of a prayer or speech in behalf of the serpent god. Below, to the left of the altar, the figure is possibly an idol; to the right of the altar a civilian is shown bringing his gifts, possibly bags of feathers. Before the mouth of this figure a most elaborate speech is indicated with buds, blossoms, and leaves.¹ In each case the conventionalization and symbolism are marked.

This development of writing from realistic pictures to those of a symbolic or conventionalized nature has its parallel in a develop-



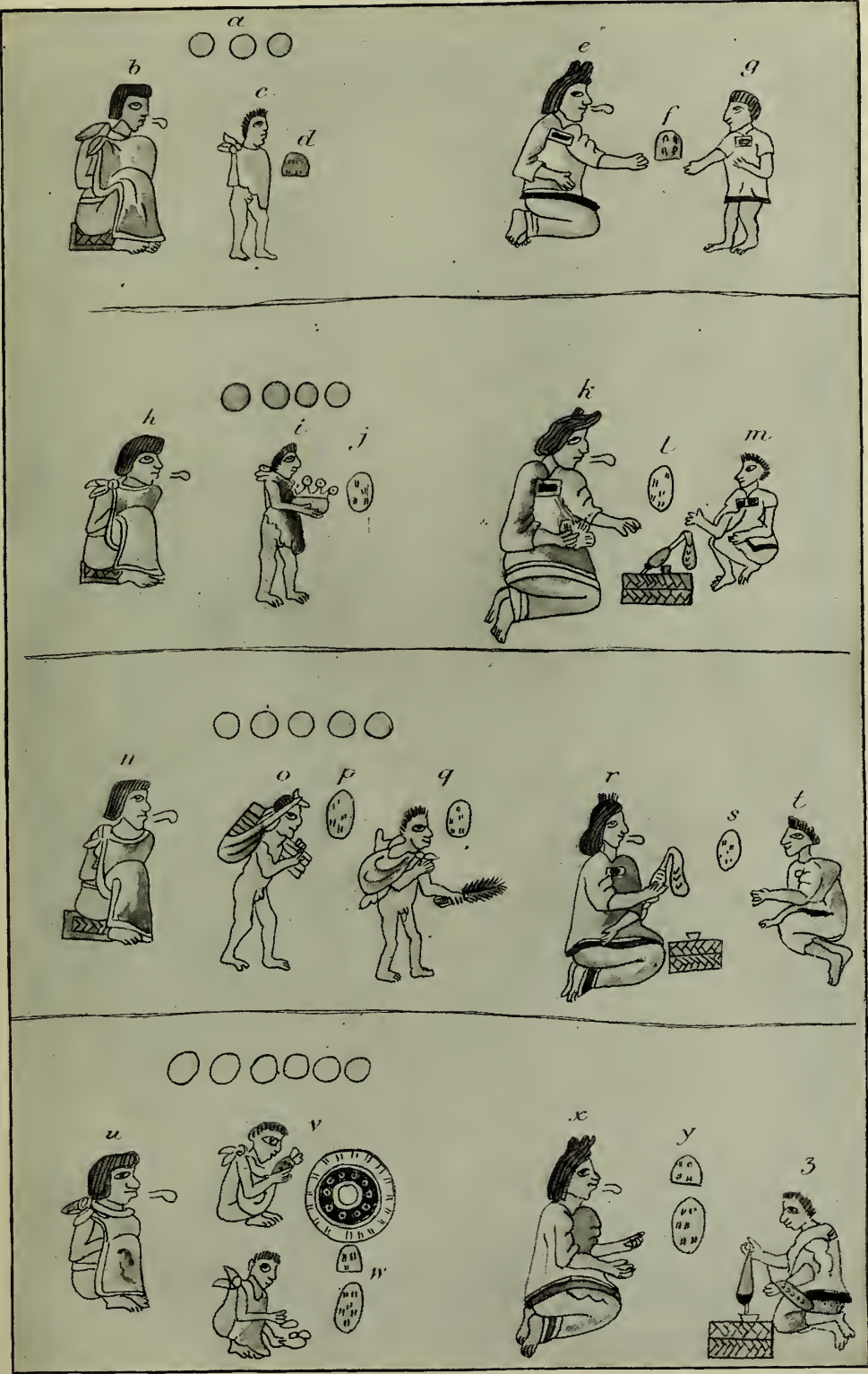
FIG. 2.

ment of ornamental art.² That the reverse process from certain more or less geometric forms to those of a realistic character may sometimes be present in primitive art should also be noted.

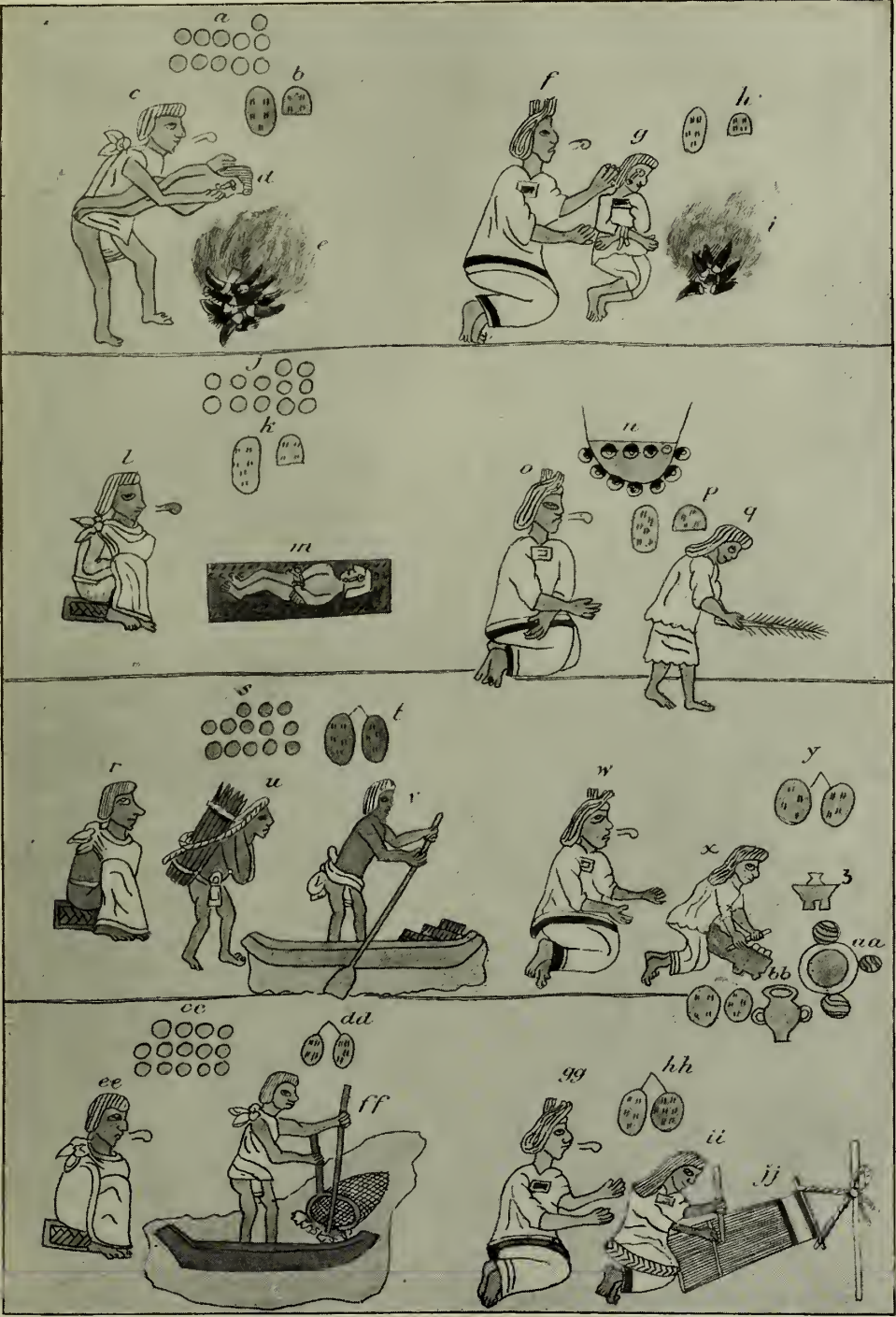
The "ideographic" stage in writing is reached when suggestions take the place of representation. The idea rather than the picture is the important factor. The Spanish priests realized very early the

¹ For other designs expressing speech and song, see Orozco y Berra, 1880, vol. 1, p. 479 and pl. 7, figs. 321-346.

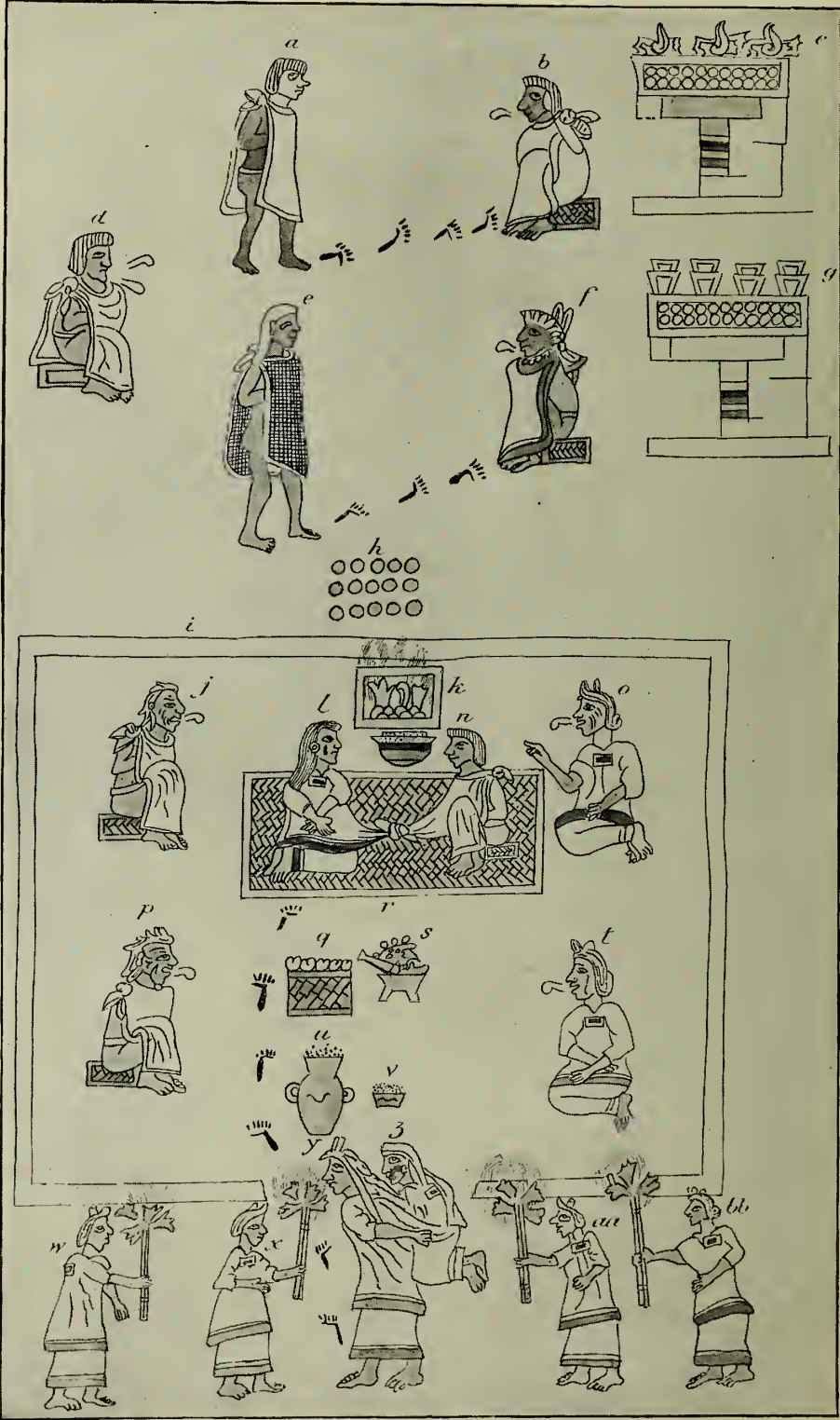
² Prof. Putnam (1887) was the first to point this out in connection with American art. See also his paper on "Symbolism in ancient American art" (1896).







MENDOZA CODEX.



great ability possessed by the natives of Mexico to read by means of pictures. They took advantage of this in several ways in order to disseminate the teachings of the Roman religion. The entire catechism was shown by means of pictures. No question of sound entered into this sort of picture writing. These pictures were painted upon great cloths and hung up before the people. A page of Velades,¹ a Latin account of the activities of the priesthood, dated 1579, shows some of the ways taken by the priests to introduce the new religion into Mexico. * * * Torquemada (1723)² and other early writers describe these charts or "*lienzos*." I know of none of these charts still in existence, but there are several manuscripts which contain the same class of pictures. Leon (1900) illustrates and describes this kind of document. The Peabody Museum has a manuscript which is slightly more elaborate in its figures than that pictured by Leon, but in all essential particulars they are identical. Both may be considered copies of earlier charts. * * *

In all these illustrations we have seen pure "thought writing,"³ ideas expressed by pictures, conventionalized pictures, symbols, or conventionalized symbols. Up to this time there has been no suggestion of the name, or, more exactly, the sound of the name. Ideas have been expressed, but ideas regardless of the sounds which the names would signify.

The next step to be illustrated by Mexican examples is where sound comes in for the first time as a factor. It is not the object now that is the desired thing, but the name of the object. This marks an intermediate stage between picture writing on the one hand and phonetic writing on the other. It employs the well-known principle of the rebus. It is this step which is illustrated with special clearness in the Nahua manuscripts, perhaps better than in the writing of any other people.

Much has been written in various places on this phase of the writing of the Mexicans. The phonetic character of the greater part of the various pictures has been known for some time.⁴ Brinton (1886 and 1886, a) has discussed this method of writing and gives it the term "*ikonomatic*," the "name of the figure or image," referring to the sound of the name rather than to any objective significance as a

¹ Velades, 1579, chap. xxviii, gives a pictorial alphabet which is of no importance. Valentine, 1880, p. 74, gives a reproduction of it.

² Book xv, chap. xxv, "Tuvieron estos Benitos Padres, un modo de Predicar, no menos trabajado, que artificeoso, y mui provechoso, para estos Indios, por ser conforme al uso, que ellos tenian, de tratar todas las cosas por Pinturas, y era desta manera. Hacian Pintar en un Lienço, los Artieulos de la Fè, y en otro, los diez Mandamientos de Dios, y en otro, los siete Sacramentos, y lo demás que querian, de la Doctrina Christiana; y quando el Predicador, queria Predicar de los Mandamientos eolgavan junto, de donde se ponía à Predicar el Lienço de los Mandamientos en distancia que podia, con una Vara señalar la parte del Lienço, que queria. * * * " For further references to this custom, see Leon, 1900.

³ Scler, 1888, uses the term "*Gedankenrebus*" for this kind of writing.

⁴ Peñafiel, 1885, gives an atlas of the place-names found in the tribute lists in the Codex Mendocino.

picture. Phonetic picture writing is perhaps a term more easily understood.

The simplest names are those compounded of two nouns expressed directly by two pictures:

Cal-tepec, the house on the mountain (fig. 3):

Cal from *calli*, house;

Tepec from *tepetl*, mountain.

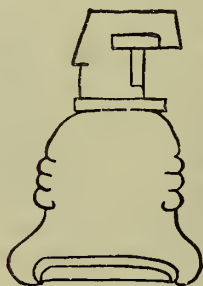


FIG. 3.

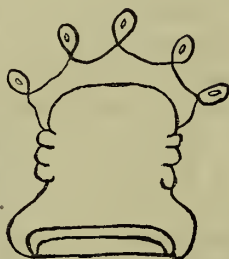


FIG. 4.

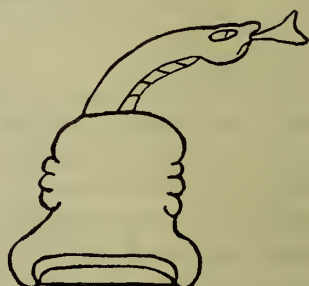


FIG. 5

A-tepec, the water on the mountain (fig. 4):

A from *atl*, water;

Tepec from *tepetl*, mountain.

Coa-tepec, the mountain of the serpent (fig. 5):

Coa from *coatl*, serpent;

Tepec from *tepetl*, mountain.

The verbal idea is expressed as one of the factors in some of the proper names, giving a compound of a verb and a noun, both ideas being expressed by pictures:

Toli-man, the place where the rushes are cut (fig. 6):

Toli from *tollin*, rushes;

Ma, the root of the verb meaning "to take something with the hand."

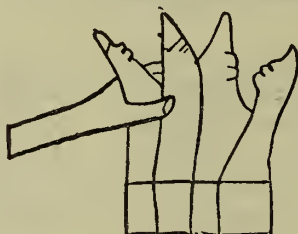


FIG. 6.



FIG. 7.

There are various ways of expressing the same combination of sounds. The syllable *pan* may be shown in three different ways, as follows:

(1) By the picture of a flag, *pantli* (fig. 7).

Chimal-pan, the shield of the flag:

Chimal, from *chimalli*, a shield;

Pan from *pantli*, a flag.

- (2) By means of the representation of a river or canal, *apanlli* (fig. 8).

Coapan, the river of the serpent:

Coa, from *coatl*, serpent;

Pan, from *apanlli*, a river or canal.



FIG. 8.



FIG. 9.

- (3) By means of position, the syllable *pani* meaning "over" or "in" (fig. 9).

Itz-mi-quil-pan, the obsidian knife over the verdure of the cultivated field:

Itz, from *itzli*, obsidian knife;

Mi from *milli*, a cultivated field;

Quil from *quilitl*, verdure;

Pan from *pani*, over.

The color of the picture also has a phonetic significance in some cases, as (fig. 10)—

A-co-coz-pan, the canal of the very yellow water:

A from *atl*, water;

Co-coz, the intensified form from *coztic*, yellow;¹

Pan from *apan*, river or canal.

In all these examples the meaning of the picture is conveyed at the same time as the sound.² The name is not made up of signs used simply for their phonetic value alone, but the meaning is expressed



FIG. 10.



FIG. 11.

by the signs as well. The town of the "very yellow water" undoubtedly derived its name from the fact that it was situated on the bank of a muddy stream. We note the river and the yellow water in the original drawing, as well as the sides of the stream.

The true phonetic stage is not reached until signs are used without regard to their meaning as pictures but simply for their phonetic

¹ In the original manuscripts the water is colored yellow.

² Another interesting development of the use of a sign where the essential feature is its name rather than its significance as a picture is seen in the character for the day *Ollin* (fig. 11). The word means "rolling motion" and is used not only to designate this day in the series of 20 days, but is found again and again in the historical records to indicate the occurrence of an earthquake.

value. In all the examples of place names given the different syllables of the term have been expressed directly by pictures of objects or acts, by position, or by color. Some other method has to be employed when one desires to bring out a meaning where it is not possible to translate the idea directly by a picture or by any of the other means we have noted.

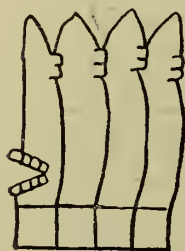


FIG. 12.

The town *Tollan*, "the place of the rushes," is easily represented by a picture of a cluster of reeds, *tollin*. Supposing, however, a town called *Tollitlan*, meaning "near *Tollan*," was the one to be written. This would be more difficult to express in picture form. The use of the homophone comes in here, words of a similar sound but with different meanings. The word *tetlan* means "near something" and the second syllable, *tlan*, is also found in *tlantli*, meaning "teeth." Thus if the picture of some teeth (fig. 12) is shown, the sound *tlan* would be expressed, suggesting in this case the meaning, not of teeth, but of nearness.

There is another word for "near" or "near by," *nauac*. A place named *Quauhnauc* has the meaning, "in or near the forest." *Quauh* is the root of the word *quauitl*, tree. The termination *nauac* is supplied by the sign of "clear speech" (fig. 13), which is a second meaning of *nauac*. A variant of this place name is shown in the Aubin manuscript (fig. 14). Here there is an animal head with the leaves of the tree shown on top. Speech is represented as in the preceding form.

An interesting class of diminutives is formed in the same way by the use of the homophone *zinco* as in *Tollanzinco*, meaning "Little Tollan." The use of determinatives is not found to express the special meaning of the word which is to be used as is the case in the Egyptian writing of the same class.

We find in the place names we have been considering the beginning of a syllabary, certain characters always used for certain combinations of sounds. These signs not only express single syllables but in a few cases, as in *tepec* and *nauac*, double syllables, and, *a* from *atl*, single sounds.

The adoption of certain definite signs to express certain combinations of sounds is a step far in advance of the stage of pure picture writing and it is well on its way toward the adoption of an alphabet where the signs no longer express combinations of sounds but single sounds. It might be possible to go a step farther in the case of the



FIG. 13.

Mexican writing and say that the Nahuas had reached, to a slight degree, this final stage in their writing. We have seen how an *a* sound in the place names is always expressed in their writing by the sign for water, *atl*. So other signs which formerly stood for entire syllables seem in some cases to have been used to express the initial sound of the syllable. The sign of a flag, *pantli*, came in time to be used for the initial sound *p*, the sign for *etl*, bean, was worn down to express the initial *e* sound, and the sign *otli*, for road, to be used for an *o* sound. I am inclined to think, however, that the Nahuas in pre-Columbian times did not realize the importance of the step which they were about to take, the use of signs for single sounds, an alphabet. In the few cases where this seems to be found we have the idea of a syllabary rather than an alphabet as the *tl* of *atl*, *etl*, and *otli*, is a nominal ending and the word in composition can stand without this suffix. The signs for *a*, *e*, and *o* are really signs for syllables composed of single sounds rather than for single letters as distinguished from syllables.

The Nahuas in the pre-Columbian period did not develop the syllabary to the point shown in later times. There are no early texts in the true sense of the word written in the Nahua characters. The Spaniards were the ones to realize the importance of the syllabary and it is undoubtedly owing to their influence that certain signs are found used in later manuscripts to express certain syllables absolutely for their phonetic value and entirely divorced from the signification of the signs as pictures. Moreover, the Spaniards seem to have used to some extent at least the signs of the Nahuas to express single sounds.

We have already noted the work of the Spanish priests in their endeavor to teach the natives the creed of the Roman Church. In this case the ideas are expressed quite apart from the sounds of the words. The pictures could be understood quite as well by one people as by another. The missionaries were not content with this. They desired the Nahuas to learn the actual sounds of the words of the catechism. They took advantage of the ability of the natives to read in signs denoting syllables. The priests selected native words which had the same initial sounds as the Latin or Spanish words which they wished the Nahuas to commit to memory. The signs for these native words were then written in the native manner. The Lord's Prayer is usually given as an example of this kind of writing.¹

¹ Torquemada, 1723. Book xv, chap. xxxvi, writes: "El Vocablo, que ellos tienen, y que mas tira à la pronunciacion de *Pater*, es *Pantli*, que significa una como *Banderita*, con que cuentan el numero de veinte; pues para acordarse del Vocablo *Pater*, ponen aquella *Banderita*, que significa *Pantli*, y en ella dicen *Pater*. Para la segunda, que dice *Noster*, el Vocablo, que ellos tienen mas parecido à esta pronun; cacion, es *Nuchtl*, que es el Nombre de la que los nuestros llaman *Tuna*, y en España Higo de las Indias; pues para acordarse del Vocablo *Noster*, pintan consecutivamente tras de la *Banderita*, una *Tuna*, que ellos llaman *Nochtli*; y de esta manera vãn prosiguiendo, hasta acabar su Oracion; y por semejante manera hallavan otros semejantes Caretères, y modos, por donde ellos se entendian, para hacer Memoria de lo

A flag (fig. 15) *pantli* suggests *pa*. A picture of a stone, *tell*, highly conventionalized, stood for *ter*, making *Pater*. A prickly pear, *nochtli*, the fig of the *castus opuntia*, was used for recalling the syllable *nos* and another stone, *tell*, the *ter*, making *noster*. In the same way (fig. 16) water, *atl*, stood for an *a* sound and *agave*, *metl*, for *men* making *amen*.

The attempt made by Bishop Diego de Landa¹ to furnish an alphabet for the interpretation of the Maya hieroglyphics, as shown by Valentini (1880), is a "Spanish fabrication" and entirely unworkable when applied to the decipherment of the hieroglyphic writing. The "alphabet" illustrates exactly the same method as that just pointed out. Here Landa chose a native word beginning with the initial sound he desired to write. A picture or symbol was

then drawn to represent this word and this came to stand for the initial sound of the word. The picture of a man's footprint stood for one of the sounds for *b*, the Maya word for road being *be*.

The hieroglyphic writing of the Mayas, however, does not serve as well as that of the Nahuas to illustrate the various steps in the development of writing as a whole. There is far less known in regard to the phonetic components of the Maya glyphs.

In view of the higher development of the calendar system found among the Mayas, we might naturally presuppose a corresponding higher develop-



FIG. 15.

ment of the art of writing and yet Förstemann (1886, p. 2), Schellhas (1886, p. 77), Brinton (1886, a), and Seler (1888) all seem to agree that the Maya hieroglyphics are essentially ideographic, with a number of constant phonetic elements which are used only to a comparatively slight extent. Up to the present time a corresponding development among the Mayas of the rebus form of writing

que avían de tomar de Coro, y lo mismo usavan algunos, que no confiavan de su Memoria en las Confesiones para acordarse de sus Pecados, llevandolos pintados con sus Caractères (como los que de nosotros se confiesan por escrito) que era cosa de ver, y para alabar à Dios, las invenciones, que para efecto, de las cosas de su salvacion buscaban, y usaban."

Las Casas in his *Apologetica Historia de las Indias*, a new edition of which is available (1909), chap. CCXXXV, writes: "Y no sabiendo leer nuestra escritura, escribir todo la doctrina ellos por sus figuras y caracteres muy ingeniosamente, poniendo la figura que corresponderá en la vox y sonida á nuestro vocablo; así como dijésemos amen, ponían pintada una como fuente, y luego y un maguey, que en su lengua frisaba con amen, porque llámalo ametl, y así de todo lo demas; yo he visto mucha parte de la doctrina cristiana escripta por sus figuras e imágenes que la leían por ellas como yo la leía per nuestra letra en una carta, y esto no es artificio de ingenio poco admirable.

¹ See Landa, 1864, p. 320.

of the Mexicans has not been found. Various elaborate attempts to read the Maya hieroglyphics phonetically have met with failure. Mr. Bowditch (1910, pp. 254-255) sums up the whole question when he writes:

While I subscribe in general to these words (that the writing is chiefly ideographic) of the eminent Americanist (Dr. Brinton), I do not think that the Aztec picture writing is on the same plane as that of the Mayas. As far as I am aware, the use of this kind of writing was confined, among the Aztecs, to the names of persons and places, while the Mayas, if they used the rebus form at all, used it also for expressing common nouns and possibly abstract ideas. The Mayas surely used picture writing and the ideographic system, but I feel confident that a large part of their hieroglyphs will be found to be made up of rebus forms and that the true line of research will be found to lie in this direction. If this is a correct view of the case, it is very important, indispensable indeed, that the student of the Maya hieroglyphs should become a thorough Maya linguist. I am also of the opinion that the consonantal sound of a syllable was of far greater importance than the vowel sound, so that a form could be used to represent a syllable, even if the vowel and consonant sounds were reversed.

A further discussion of the hieroglyphic writing of the Mayas would lead us too far away from our subject.

I have not attempted to elucidate any new problems or to add to the knowledge of the writing of the Mexicans, but to coordinate and systematize the various forms and employ them as examples of the general development of writing. There is found in Mexico, perhaps to a greater degree than in any other one place in the world, examples of all the different kinds of writing, as we have seen, starting with a preliminary stage of reminders and passing to pure pictures which are used simply in their objective sense as pictures, thence to the more or less conventionalized and symbolic pictures or ideographs and finally to characters expressing sounds as well as ideas, and the beginning of a syllabary, the first step in the development of a phonetic writing, and a step beyond which the Nahuas did not go. The Spanish priests made the last advance toward the goal, the formation of an alphabet, by selecting a few syllabic characters which they used to express the initial sounds. The first credit belongs, however, to the ancient Nahuas, who arrived, quite independently, at the idea of the possibility of a phonetic writing, and it is not difficult to imagine a further development into a true alphabet had they been left to develop their culture in their own way.



FIG. 16.

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